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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,168	01/04/2002	Burkhard Standke	211599US0	1767

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EXAMINER	
FEELY, MICHAEL J	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/035,168	STANDKE ET AL.
	Examiner	Art Unit
	Michael J. Feely	1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-32 and 36-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20-22,24-28,30-32 and 51* is/are allowed.

6)☒ Claim(s) *4-19,29 and 36-50* is/are rejected.

7)☒ Claim(s) *7 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Claims 4-32 and 36-51 are pending.

Claim Objections

1. The previous objection to claims 7 and 23 stands: these claims feature improper Markush language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. The previous rejection of claims 13 and 29 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, stands.

Regarding claim 13, silicon compound A is defined as having ***at least one hydrolyzable group and at least two organofunctional groups***; and silicon compound B is defined as having ***at least one hydrolyzable group and at least one organofunctional group*** *(see independent claim 36)*. However claim 13 recites that one or both of the silicon compound A and B is an organosilane of general formula I: $R^1_xR^2_ySiZ_{(4-x-y)}$ wherein $(x+y) \leq 3$. It is unclear how this can be.

- For compound A, three of the four Silicon valences are accounted for, with R^1 and/or R^2 (x and/or y) accounting for at least 2 valences and Z accounting for at least 1 (maximum of 2). If one Z is present, (x +y) = 3. If two Z's are present, (x + y) = 2.

- For compound B, two of the four Silicon valences are accounted for, with R^1 and/or R^2 (x and/or y) accounting for at least 1 valences and Z accounting for at least 1 (maximum of 3). If one Z is present, (x +y) = 3. If two Z's are present, (x + y) = 2. If three Z's are present, (x + y) = 1.

Therefore, it appears that for compound A, the following would apply: $2 \leq (x+y) \leq 3$; and for compound B, the following would apply: $1 \leq (x+y) \leq 3$.

Regarding claim 29, silicon compound A is defined as having ***at least one hydrolyzable group and at least one organofunctional group***; and silicon compound B is defined as having ***at least one hydrolyzable group*** *(see independent claim 20)*. However claim 19 recites that one or both of the silicon compound A and B is an organosilane of general formula I: $R^1_xR^2_ySiZ_{(4-x-y)}$ wherein $(x+y) \leq 3$. It is unclear how this can be.

- For compound A, two of the four Silicon valences are accounted for, with R^1 and/or R^2 (x and/or y) accounting for at least 1 valences and Z accounting for at least 1 (maximum of 3). If one Z is present, (x +y) = 3. If two Z's are present, (x + y) = 2. If three Z's are present, (x + y) = 1.
- For compound B, one of the four Silicon valences are accounted for, with Z accounting for at least 1 (maximum of 4). If one Z is present, (x +y) = 3. If two Z's are present, (x + y) = 2. If three Z's are present, (x + y) = 1. If four Z's are present, (x + y) = 0.

Therefore, it appears that for compound A, the following would apply: $1 \leq (x+y) \leq 3$; and for compound B, the following would apply: $(x+y) \leq 3$.

4. Claims 36, 4-19, and 37-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites the limitation "the acid or base" in the process for modifying the surface of an organofunctional substrate. There is insufficient antecedent basis for this limitation in the claim. Applicant has amended claim 36 to include the limitations of a previous version of claim 6; however, Applicant has failed to include the intermediate limitations of the previous version of claim 5. Hence, there is no mention of an acid or base until the very end of the claim. The rejection can be overcome by including the limitations of the previous versions of claims 5 and 6 *(see amendment filed May 29, 2004)*. Claims 4-19 and 37-50 are rejected because they are dependent from claim 36.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. The previous rejection of claims 36, 4, 5, 8-11, and 13-19 under 35 U.S.C. 102(b) as being anticipated by Humphrey, Jr. (US Pat. No. 4,235,954) has been overcome by amendment.

7. The previous rejection of claims 20, 21, 24-27, and 29-32 under 35 U.S.C. 102(b) as being anticipated by Humphrey, Jr. (US Pat. No. 4,235,954) has been overcome by amendment.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. The previous rejection of claims 12 and 28 under 35 U.S.C. 103(a) as being unpatentable over Humphrey, Jr. (US Pat. No. 4,235,954) in view of Moncur et al. (US Pat. No. 5,378,535) has been overcome by amendment.

Claim Rejections - 35 USC § 102/103

10. Claims 17 and 47 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Humphrey, Jr. (US Pat. No. 4,235,954).

11. Regarding claims 17 and 47, Humphrey, Jr. discloses ***(17)*** a surface-modified substrate (Abstract); ***(47)*** wherein the substrate is plastic (Abstract), produced by *(36)* a process for modifying the surface of an organofunctional substrate (Abstract) comprising the steps of:

a) applying a silicon compound A to the surface of a organofunctional substrate (Abstract) wherein said silicon compound A comprises at least two organofunctional groups, and comprises at least one hydrolyzable group selected from the group consisting of chloro, alkoxy, carboxy, ad hydroxyl (column 9, lines 17-39); wherein at least one of the organofunctional groups is capable of undergoing a crosslinking reaction upon exposure to UV radiation (Abstract; column 9, line 40 through column 10, line 17), and wherein the silicon compound A is *capable* of forming a polymer bearing a silyl group (*inherent:* column 9, lines 17-39),

b) reacting an organofunctional group of the silicon compound A with the surface of an organofunctional substrate to form a polar surface (Abstract),

c) exposing the polar treated surface to UV radiation to initiate crosslinking between the at least one of the organofunctional groups of the silicon compound A capable of undergoing a crosslinking reaction upon exposure to UV radiation (Abstract);

d) applying a silicon compound B to the polar treated surface (Abstract), said silicon compound B comprising at least one organofunctional group and at least one hydrolyzable group selected from the group consisting of chloro, alkoxy, carboxy, and hydroxyl (column 12, lines 18-54); wherein the silicone compound B may be the same or different from the silicon compound A (column 12, lines 18-54); and

e) reacting the silicon compound B with the polar treated surface (column 13, lines 27-34).

He does not disclose *the presence of an acid or base* selected from the group consisting of hydrochloric acid, nitric acid, formic acid, acetic acid, phosphoric acid, sulfuric acid, an amine, sodium carbonate, sodium hydroxide, ammonium chloride, sodium acetate, and ammonium acetate. However, it should be noted that claims 17 and 47 are product by process claims and that the *acid or base* are catalytic compounds. In light of this, it has been found that, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Therefore, the product of Humphrey, Jr. would have been the same or obvious variation of the instantly claimed product because the addition of an acid or base would not have materially changed the final product due to the catalytic nature of the acid or base additive.

Allowable Subject Matter

12. Claims 20-22, 24-28, 30-32, and 51 are allowed.

13. Claims 36, 4-16, 18, 19, 37-46, and 48-50 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

14. Claims 29, 48, and 49 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claim 23 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims {36, 4-16, 18, 19, 37-46, and 50} and {20-28, 30-32, and 51}, Humphrey, Jr. is the closest prior art; however, he provides no motivation to use an acid or base in his process selected from the group consisting of hydrochloric acid, nitric acid, formic acid, acetic acid, phosphoric acid, sulfuric acid, an amine, sodium carbonate, sodium hydroxide, ammonium chloride, sodium acetate, and ammonium acetate.

Regarding claims 48 and 49, Humphrey, Jr. is the closest prior art; however, he exclusively uses a polycarbonate substrate. He provides no motivation to use a fiber substrate or substrate of a natural substance.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

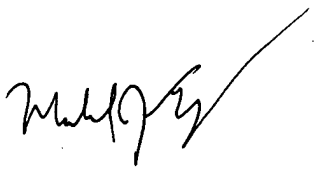
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely
Patent Examiner
Art Unit 1712

December 22, 2004